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3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

KRYLOVA, IRINA

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GUY D. JOLY, LARRY R. KREPSKI,
ANN R. FORNOF, SERKAN YURT,
BABU N. GADDAM, and
AHMED S. ABUELYAMAN¹

Appeal 2015-006507
Application 13/169,306
Technology Center 1700

Before BRADLEY R. GARRIS, JEFFREY T. SMITH, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 34–37 and 43–52. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

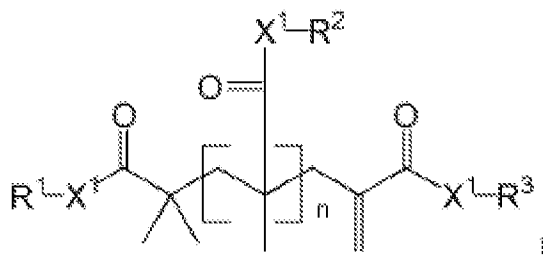
¹ 3M Company and its affiliate, 3M Innovative Properties Company, are identified as the real parties in interest. App. Br. 3.

Appellants claim a polymerizable composition comprising a (meth)acrylic ester of non-tertiary alcohol (e.g., methyl methacrylate) and an addition-fragmentation agent of a particular formula (independent claim 34). The addition-fragmentation agent is said to relieve polymer stress via labile crosslinks that can cleave and reform during the polymerization process (Spec. 1).

A copy of representative claim 34, taken from the Claims Appendix of the Appeal Brief, appears below.

34. A polymerizable composition comprising:

- a) 85 to 100 parts by weight of an (meth)acrylic acid ester of non-tertiary alcohol;
 - b) 0 to 15 parts by weight of an acid functional ethylenically unsaturated monomer;
 - c) 0 to 10 parts by weight of a non-acid functional, ethylenically unsaturated polar monomer;
 - d) 0 to 5 parts vinyl monomer; and
 - e) 0 to 5 parts of a multifunctional (meth)acrylate;
- based on 100 parts by weight total monomer, and
 0.1 to 10 parts by weight of an addition-fragmentation agent, based on 100 parts by weight of a) to e), said addition-fragmentation agent of the formula:



wherein

R^1 , R^2 and R^3 are each independently Z_m -Q-, a (hetero)alkyl group or a (hetero)aryl group with the proviso that at least one of R^1 , R^2 and R^3 is Z_m -Q-,

Q is a linking group have a valence of $m + 1$;
Z is an ethylenically unsaturated polymerizable group,
m is 1 to 6;
each X^1 is independently -O- or -NR⁴-, where R⁴ is H or
C₁-C₄ alkyl, and
f) n is 0 or 1, and
wherein the number of Z groups is ≥ 2 .

Under 35 U.S.C. § 103(a), the Examiner rejects as unpatentable:
claims 34, 36, 37, and 45–48 over Aert (US 2006/0009574 A1,
Jan. 12, 2006) in view of Lin (US 4,621,131, Nov. 4, 1986) and Abbey (US
4,608,423, Aug. 26, 1986) (Non-Final Action (dated September 3, 2014) 4–
8);

claims 35–37 over Aert, Lin, Abbey, and Hosaka (US 4,184,992,
Jan. 22, 1980) (*id.* at 8–9); and

claims 34–37 and 43–52 (i.e., all claims on appeal) over Abuelyaman
(US 2010/0021869 A1, Jan. 28, 2010) in view of Aert, Guan (US 5,767,211,
June 16, 1998), and Abbey, as evidenced by Berge (US 5,371,151, Dec. 6,
1994) (*id.* at 9–16), wherein claims 45–52 are alternatively rejected over
these references further in view of Takahashi (US 6,265,133 B1, July 24,
2001) and Haubennestel (US 6,710,127 B2, Mar. 23, 2004) (*id.* at 16–19).²

² In the Answer, the Examiner withdraws other rejections presented in the
Final Action (dated November 10, 2014) (Ans. 15), thereby clarifying that
only the above listed § 103 rejections are advanced in this appeal.

The Rejections Based on Aert as a Primary Reference

We sustain these rejections for the reasons expressed in the Non-Final Action, the Final Action, and the Answer with the following comments added for emphasis and completeness.

In rejecting the independent claim 34, the Examiner finds that Aert discloses a polymerizable composition comprising a monomer such as methyl methacrylate and an addition fragmentation agent (i.e., formula (II) of Aert (¶ 20), which the Examiner identifies as formula A (*see, e.g.*, Non-Final Action 5) but does not explicitly recite that the R3 and R4 groups of this agent are ethylenically unsaturated polymerizable groups as claimed (*id.* at 4–5). The Examiner concludes that it would have been obvious to provide R3 and R4 as ethylenically unsaturated polymerizable groups as taught by Lin and Abbey to ensure molecular weight control and good hydrolysis resistance of the polymer (*id.* at 7).

Appellants contest the rejection of claim 34 by presenting arguments that attack the applied references individually rather than the combined teachings of the references as proposed in the rejection (App. Br. 11–17). However, “[n]on-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Further, Appellants’ arguments lack convincing merit. For example, Appellants disagree with the Examiner’s finding that Lin discloses an oligomer end-capped with an unsaturated carboxylic acid (App. Br. 12) yet concede that some such end-capped termini would exist (*id.* at 13). Appellants’ contention regarding the claimed concentration of the addition-

fragmentation agent (*id.* at 15) is ineffective because it fails to address the Examiner's finding that Aert discloses a concentration within the claimed range (Non-Final Action 5 (citing Aert ¶ 90)). Appellants argue that the applied references would not have been combined to ensure good hydrolysis resistance as urged by the Examiner because "Aert neither teaches nor suggests the desirability of hydrolytic stability" (App. Br. 18). This argument is undermined by Aert's express desire to produce hydrophobic polymer (*see, e.g.*, Aert Abst., ¶ 18). Finally, Appellants' comment that Aert and Abbey do not suggest labile crosslinks and reduction in stress (App. Br. 19) appears to be irrelevant because claim 34 does not require labile crosslinks or stress reduction and because the correct analysis for obviousness does not require the prior art to address the problem Appellants were attempting to solve (*see KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007)).

In summary, Appellants fail to show error in the Examiner's rejection of independent claim 34 and fail to present arguments against the corresponding rejection of dependent claims 36, 37, and 45–48 (App. Br. 11–19). Therefore, the rejection based on Aert, Lin, and Abbey is sustained.

We also sustain the rejection of claims 35–37 over Aert, Lin, Abbey, and Hosaka. Appellants' argument against this rejection questions why Aert would have benefited from the transparency property taught by Hosaka (*id.* at 20). This argument is vitiated by Aert's express teaching of a desire for transparency (Aert ¶ 11).

The Rejections Based on Abuelyaman as a Primary Reference

In rejecting independent claim 34 (as well as remaining dependent claims 35–37 and 43–52), the Examiner finds that Abuelyaman discloses a

polymerizable composition of the type claimed except that Abuelyaman's cross-linking agent possesses a core section differing from the core of the claimed addition-fragmentation agent (Non-Final Action 9–11). The Examiner concludes that it would have been obvious to replace the core of Abuelyaman's cross-linking agent with the core of Aert's previously discussed cross-linking agent, thereby resulting in the addition-fragmentation agent defined by claim 34, to ensure the desired cross-linking while simultaneously allowing chain scission/propagation as evidenced by Berge especially since such compounds are known in the prior art as shown by Guan and Abbey (Non-Final Action 14–15).

Appellants contest this rejection of claim 34 by arguing “[t]he Examiner is impermissibly substituting a key element of Abuelyamen [sic], the crosslinking agent, for the chain transfer agent of Berge . . . specifically, the Examiner selects a portion of a molecule from Berge (the glutarate portion) and substitutes it for the bisphenol potion [sic] of the Abuelyamen [sic] crosslinking agents” (App. Br. 23).

Appellants' argument is unpersuasive because it is based on an incorrect characterization of the Examiner's rejection. As stated above, the Examiner proposes replacing the core of Abuelyaman's agent with the core of Aert's agent, not with the core of Berge's agent as Appellants erroneously believe. In their Reply Brief, Appellants acknowledge the Examiner's proposal (Reply Br. 8), “invite the Board to compare the structures [of Aert, Abuelyaman, and Berge]” (*id.* at 8–9), and assert without embellishment “the proposed substitution is not warranted” (*id.* at 9). Appellants' unembellished assertion fails to reveal error in the rejection under review.

For these reasons, and because Appellants do not present separate arguments against the corresponding rejection of the dependent claims (App. Br. 22–24), we sustain the rejection of claims 34–37 and 43–52 (i.e., all appealed claims) over Abuelyaman, Aert, Guan, and Abbey as evidenced by Berge.

As previously noted, the Examiner alternatively rejects dependent claims 45–52 over the above references and further in view of Takahashi and Haubennestel. The above rejection of claims 45–52 over Abuelyaman, Aert, Guan, and Abbey as evidenced by Berge has been sustained due to Appellants’ failure to challenge this rejection as applied against these claims. Under these circumstances, we will not reach the Examiner’s alternative rejection of claims 45–52, for doing so would not alter the disposition of this appeal.

Conclusion

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED